THE DER WEEKLY

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Industry News

PES Reports Key Accomplishments in Hydrogen Storage

Proton Energy Systems, Inc. (PES) announced on June 5 key accomplishments it has made in **hydrogen energy storage**. These achievements include a demonstration of a renewable solar device coupled with a hydrogen generator and an advanced stirling heat engine, verification of a new control board that integrates more than 20 components and eliminates a significant amount of point-to-point wiring, and development of an advanced power conditioner (in partnership with Sustainable Energy Technologies) that has the potential to lower costs and provide for a universal interface to direct renewable inputs. PES has worked with the **Department of Energy's Hydrogen Program** since 1998 on these projects. *PR Newswire*, June 5

Capstone Completes First Stand-Alone 60-kW Microturbine, Faces Decrease in Price of Shares

Capstone Turbine Corporation has announced the completion of its first stand-alone Capstone 60 microturbine. According to the company, the microturbine (with its energy integrated storage system) is self-starting, allowing it to **operate independent of an electric grid**. This configuration provides for dual-mode switching between grid connection and stand-alone modes. It was originally specified as having an efficiency of 26 percent +/-2 percent at ISO conditions, but after testing it has reached an efficiency rating of 28 percent +/-2. The first stand-alone system will be a 6-pack of Capstone 60s that will be **deployed by Advantica** and installed in a hotel development. Advantica, a provider of technology and engineering services, plans to use heat generated by the microturbine for water heating, laundry, and space heating at the hotel through its MiniGen™ **combined heat and power system.**

According to *Reuters*, Merrill Lynch analyst Sam Brothwell cut his estimates for the number of microturbines Capstone will deliver in 2001 from 2,800 to 2,100, and in 2002 from 7,900 to 4,100. This estimated decrease in sales is attributed to competition from other companies such as Caterpillar Inc., and the California energy situation that has created demand "yet caused customers to panic, making it more difficult to sell new and unproven products." Capstone shares, which were once as high as $98 last September, now hover around $30 per share. *Reuters*, June 4; *Capstone Press Release*, June 4

Energy Tech Stocks Surging Despite Unrealized Profits

According to *Reuters*, energy tech stocks are surging despite the fact that **few solar panel, microturbine, and fuel cell companies are actually turning profits.** Evergreen Solar Inc. stock has increased in value by 33 percent, American Superconductor Corporation by 58 percent, and FuelCell Energy Inc. by 80 percent since March. During the same period the S&P 500 Index increased by only 7.4 percent. The companies acknowledge that their **valuations are too high** and that they might return to normal levels as investors focus on fundamentals. Analysts believe that energy tech companies will remain strong for the most part, and should not face a collapse like that of dotcom companies, which experienced a similar phenomena. Merrill Lynch analysts have predicted when energy technology companies may begin to see profits, suggesting that Capstone and Active Power Inc. should be profitable in 2003, FuelCell Energy in 2005, and Ballard Power Systems Inc. in 2006. *Yahoo! Finance*, June 7

NYPA Begins Testing of Mini-Power Plants

The New York Power Authority (NYPA) **has begun testing the 11 mini-power plants** being installed in New York City and Long Island. Unit 1 was tested at Hell Gate in the Bronx on June 4, and NYPA plans to test 10 of the 11 generators by the end of June. One of the units in the Williamsburg section of Brooklyn was delayed by lengthy site preparation. It is estimated that the total project will cost more than $500 million. *Energy Online*, June 5

Pratt & Whitney and Mitsubishi Heavy Industries Explore New Development

Pratt & Whitney and Mitsubishi Heavy Industries Power Systems are exploring the development of a new generation of mid-size gas turbines. The two power systems companies are considering **combining their experience and technologies to develop new reliable products** to help alleviate power shortages. Combined, they have more than 1,600 gas turbines in operation worldwide. *Pratt & Whitney Press Release*, June 6

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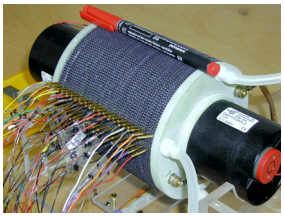
In This Issue:

According to *Reuters,* 34 coal plants are being planned across the United States. If they are all built, they will provide 20,217 MW of power.*

Manhattan Scientifics Ready for Volume Manufacturing of NovArs Fuel Cells

Manhattan Scientifics, Inc. is engaged in discussions with several possible joint venture partners to pilot a production line leading to **volume manufacturing of its NovArs fuel cells.** NovArs is a medium power fuel cell that provides power for applications ranging from portable electronics to power systems for home and recreation. Typical power output is from two watts up to three kW. The company expects the new manufacturing line's initial output to be sufficient to support the early fuel cell needs of its current customers, which includes Electrolux, the U.S. Army, and Aprilia. *Manhattan Scientifics Press Release*, June 6



Greenvolt to Begin Production of GV-Flash

Greenvolt Power Corporation is preparing to begin production of a **compact, inexpensive emergency blinker** that is powered by a Greenvolt fuel cell. According to the company, the GV-Flash will be able to operate 24 hours per day for more than a week without servicing. It is Greenvolt's most recent application of its magnesium air saltwater fuel cell that is activated or deactivated by adding or removing saltwater, and can be used as an emergency flasher, rescue signal, or emergency boat light. *Fuel Cells Today*, June 4

Policy News

State Senate Amends Nevada Energy Bill

On June 1, Governor Guinn returned SB 372 to the Senate and Assembly to be amended (see *The DER Weekly*, June 1 for more information on this bill). The Governor was concerned about requiring renewable energy power developers to charge "just and reasonable" prices for power, so the Senate included new language that gives the Public Utilities Commission authority in determining whether contracts comply with the measure. In addition, the **amendments lower the minimum percentage of renewable energy utilities must buy or generate** from 10 percent to 5 percent by 2003. *Las Vegas Review-Journal*, June 3

Indiana Clean Energy Plan to be Approved

Indiana's Air Pollution Control Board is set to vote on a rule that would implement a **clean energy incentive program**. The plan is part of a larger measure that will reduce power plant NO_x emissions by 65 percent and statewide NO_x pollution by 31 percent through an emissions trading program. If the plan is approved, Indiana could become the fourth state in the nation with a clean energy incentive program, which would be the second largest with **approximately $2.1 million set aside for energy efficiency and renewable energy projects**. *Evansville Courier & Press*, June 5

DOE News

Transmission Congestion Briefing

The Office of Power Technologies (OPT) participated in a briefing hosted by the Environmental and Energy Study Institute on June 5. The briefing on Capitol Hill in Washington, D.C. drew more than 130 people, of which 32 were staffers. It provided information on several **emerging technologies that could help alleviate various congestion problems,** and educated attendees on the issues surrounding reliability from the customers' perspective and in regards to the transmission/ distribution system. These technologies have been developed as public/private partnerships with OPT. The briefing included presentations by Michehl Gent, President, North American Electric Reliability Council, Vikram Budhraja, President, Electric Power Group, Tracy Anderson, Program Manager, 3M, Joseph Hoagland, Senior Manager, Public Power Institute, and Patricia Hoffman, Director, OPT Distributed Energy Resources.

CERTS Meets in Washington, DC

On June 5, Phil Overholt participated in the Consortium for Electric Reliability Technology Solutions (CERTS) Industry Advisory Board meeting in Washington, DC. National laboratory, university, and industry investigators from CERTS presented updates on the key activities in the **Transmission Reliability program,** and received guidance and comments from the Board. Board members present included the Presidents of the North American Electric Reliability Council, the California Independent System Operator, and the American Transmission Company, and Vice Presidents of two energy marketing companies and a major electric utility. All agreed that the work on reliability monitoring tools and the experimental evaluation of market designs was making excellent progress, and should receive increased public exposure to promote their use.

First International Conference on Hybrid Power Systems

The 1st International Conference on Hybrid Power Systems was held in Newport Beach, California, on May 24 and 25. The conference was sponsored by the University of California at Irvine, the Office of Power Technologies, the National Energy Technology Laboratory, and the UN Economic Commission for Europe. The purpose of the conference was to **present emerging concepts in hybrid power systems** that can maximize advantages in the areas of fuel flexibility, efficiency, emissions, availability, economics, and sustainability. Gary Burch made a presentation on renewable hybrids, and Joe Galdo made a presentation on power parks. More than 80 participants attended from the U.S., Europe, and Asia.

Distributed Generation the Topic for NREL Brownbag Seminar

On June 7, the National Renewable Energy Laboratory hosted

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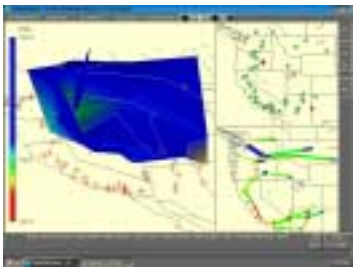
Two coal plants are scheduled to be operating next year: a 300 MW plant in Duval, Florida, and a 540 MW plant in Lima, Ohio.*

Power Crunch

DOE Transmission Reliability Program Briefing

On June 4, the Transmission Reliability program conducted a briefing in Washington, DC on the program's highest priority projects that address electric grid reliability. The briefings, attended by 45 Department of Energy and electricity industry stakeholders, featured reliability monitoring tools that are now being implemented in prototype on the grid through partnerships with the North American Electric Reliability Council (NERC) and the California Energy Commission/ California Independent System Operator. Demonstrations of the real time VAR monitoring and the Area Control Error (ACE) tools were given.



The Real time VAR monitoring performance, tracking, and prediction tool assists operators and security coordinators in identifying and evaluating voltage problems on the grid. The tool turns data into information with its color-coded interface. DOE has developed the prototype and the California Energy Commission is funding an installation in Southern California.

The ACE performance and tracking tool provides NERC Security Coordinators with information for tracking and near real-time predictions for actual versus scheduled power flows among the 11 NERC regions and 145 control areas. This tool has been developed by DOE and is being reviewed by NERC subcommittees for acceptance.

The briefings also included presentations on grid integration of distributed energy resources including results on microturbine testing at the University of California at Irvine's Microgrid project, and a Cornell University study in behavioral experiments to assess market participants' response to alternative market structures. New initiatives were also discussed including a national assessment of the cost of reliable electricity and the demonstration of a low cost power quality sensor.

a brown bag seminar titled, "Distributed Generation: The Power Paradigm for the New Millennium," presented by Anne-Marie Borbely, Battelle/PNNL. Ms. Borbely's presentation provided an overview of her book (same title), an explanation of some of her research on distributed generation (DG), and a **discussion on issues surrounding the present and future markets and regulatory climates for DG.**

Environmental News

Earth Orbiting Monitor Tracks Air Pollution

An orbiting monitor, launched in December 1999, is tracking air pollution worldwide from aboard NASA's Terra spacecraft as it circles the earth 16 times per day. The first set of global observations includes data from March to December 2000, and maps different sources of pollution. The initial data shows emissions from burning fossil fuels for home heating and transportation drifting across the northern hemisphere, and immense clouds of carbon monoxide from forest and grassland fires in Africa and South America. Although the monitor, MOPITT (Measurements of Pollution in the Troposphere), cannot distinguish between individual industrial sources in the same city, it is accurate enough to differentiate air pollution in large metropolitan areas from a major fire in a national forest. Scientists at the National Center for Atmospheric Research hope to use the data to pinpoint pollution sources and **create global maps of long-term lower-atmosphere pollution.** *Environmental News Network*, June 5; Photo courtesy of NASA (posted on *enn.com*)

MOPITT in lab before launch

By the Numbers

North American Top 10 Sponsors for Power Projects in 2000

Project Sponsor	Amount (millions)
1. Public Service Electric & Gas	$3,500
2. Calpine Corporation	$3,193.75
3. Southern Company	$3,193
4. Northern States Power	$3,120
5. Cogentrix Energy	$3,051.7
6. PG&E Corporation	$1,754.26
7. Orion Power Holdings	$1,710
8. Reliant Energy	$1,613
9. Edison International	$1,438
10. Utilicorp United	$1,080

Hart Energy Markets, "$ Still Available in the United States," May 2001 (Source cited in article: Capital Data ProjectWare)

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Wisconsin plans to add 2,800 MW of coal-fired plants from 2007 to 2013.*

CALENDAR OF EVENTS

JUNE 2001			
Date	Event	Location	Other Information
11	Fuel Cell Transportation Technology Summit	San Jose, CA	Sandra Gadzia; gadzia@sae.org
11-13	International Symp. on DG: Power System & Market Aspects	Stockholm, Sweden	www.ekc.kth.se/ees/workshop/DG.htm
12-14	Environmental Management and Technology Conference & Exhib.	Atlantic City, NJ	Info@entechexpo.com, Tower Conference Management Co.
13	Delaware Photovoltaic Code and Interconnection Workshop	Dover, DE	Susan Guard, PRO, 215-656-6965 susan.guard@ee.doe.gov
13-15	Natural Gas and Power Generation Strategies: Solving the Natural Gas and Energy Crisis	Tucson, AZ	www.intertechusa.com
14-16	NREL Consumer Energy Expo	Golden, CO	David Glickson, 303-384-6566
17-20	11th Canadian Hydrogen Conf.: Building the Hydrogen Economy	Victoria, BC, Canada	www.iesvic.uvic.ca/cha (Canadian Hydrogen Association)
18-20	APPA National Conference	Washington, DC	www.appanet.org
20-22	2nd Annual Small Business Conference: Excellence in Energy with Small Businesses	Las Vegas, NV	www.bechtelnevada.com/SBAconf/index.htm
21-22	Fundamentals of Energy Management	Memphis, TN	Sponsored by FEMP and Association of Energy Engineers www.aeecenter.org/seminars
26	Congressional Fuel Cell Exposition	Washington, DC	Cannon Caucus Room, 345 Cannon House Office Building 11:00 am to 3:00 pm. For more info: gdolan@usfcc.com
26-27	Environmental "Cradle to Grave" Analysis of Fuel Cell Applications Workshop	Cincinnati, OH	Hosted by EPA National Risk Management Research Laboratory. For more info: lisa.e.mahoney@saic.com
27	USCHPA Annual Meeting and Policy Day	Washington, DC	www.nemw.org/uschpa/PolicyDay0601.htm
27-28	TN Wind Workshop	Knoxville, TN	W. Dwight Bailey 404-562-0564

JULY 2001			
9-13	4th International Symposium on New Materials for Electrochemical Syst.	Montreal, Quebec	www.newmaterials.polymtl.ca/eng/congres
10-12	Gas Storage Workshop	Kingston, Ontario	David Quinn; quinn-d@rmc.ca
16-19	2001 National Workshop on State Building Energy Codes	Burlington, VT	www.eren.doe.gov/buildings/codes_standards/buildings/2001natl_workshop.html
24-27	ACEEE Summer Study	Tarrytown, NY	www.aceee.org; Rebecca Lunetta; 302-292-3966
30 - Aug. 1	Green Power Conference	Portland, OR	Tina Kaarsberg, tina.kaarsberg@ee.doe.gov; megan_maguire@nrel.gov

Peabody Group is planning a $1.5 billion, 1,500 MW Thoroughbred plant for Kentucky that would come online in 2005.*

CALENDAR OF EVENTS

AUGUST 2001			
11-15	NCSL Annual Meeting and Exhibition	San Antonio, TX	www.ncsl.org
21-24	International Energy Program Evaluation Conference	Salt Lake City, UT	608-835-6880; marymcc@tds.net
29-30	Integrated Energy Efficiency Conference and Facilities Management and Maintenance Expo	Cleveland, OH	www.aeecenter.org
29-Sep. 3	IEEC Integrated Energy Efficiency Congress	Cleveland, OH	Sponsored in part by FEMP; www.aeecenter.org
SEPTEMBER 2001			
9-14	6th International Conference on Carbon Dioxide Utilization	Breckenridge, CO	Barbara Ferris, 303-275-3781; www.nrel.gov/iccduvi/
11-13	7th Grove Fuel Cell Symposium	London, UK	www.grovefuelcell.com
16-19	NASEO Annual Meeting	Portland, ME	www.naseo.org/events/annual/default.htm
17-21	Fifth Biomass Conference of the Americas	Orlando, FL	www.fsec.ucf.edu/bioam; dee_scheaffer@nrel.gov
24-26	Powering the Future—New Strategies and Solutions for Deploying Distributed Power in the Marketplace	Chicago, IL	www.intertechusa.com
30 – Oct. 5	UPEx'01: The Photovoltaic Experience Conference & Exhibition	Sacramento, CA	Jjudd@ttcorp.com; hosted by Sacramento Municipal Utility District; includes distributed energy technologies workshop
OCTOBER 2001			
2-3	Midwest Electrical Conference and Expo	Indianapolis, IN	George Howell 800-676-2136, www.electricleagueindiana.org/expo2001/index.htm
14-17	National Center for Photovoltaics Program Review	Lakewood, CO	barbara_ferris@nrel.gov, 303-275-3781
24-26	World Energy Engineering Congress	Atlanta, GA	www.agcc.org (includes CHP Expo www.aeecenter.org)
24-27	Excellence in Building 2001	Orlando, FL	www.eeba.org/conference
NOVEMBER 2001			
1-4	World Congress for a Hydrogen Economy	Denver, CO	ww.hydrogennow.org
11-14	113th NARUC Annual Convention	Philadelphia, PA	www.naruc.org

***Source: *Reuters*, June 7**